INVERTER

USER GUIDE

Science and Technology Lighten your Life!

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General

Direction for use

1、MTS series INVERTER is used DDC、DSP etc new technology special design for It、spaceflight、communciation、electric power、bank、tax etc industry user with high degree of stability INVERTER.

2、In people's habitation, INVERTER may arose electric wave disturb,if so,user need to take precautions.Such as: when radio or tv put too near this INVERTER will be disturb, we should put them far from it.

3、When fix the INVERTER, please particular read this user manual.

Notice

1、if INVERTER do not connect to "grounding"system,it can't manipulate.First connect the main input power supply to INVERTER "G"connection group terminal block.

2、INVERTER still have voltage at the situation of input、battery and output switch cut. Not speciality technican move or open INVERTER front door, will damdge both INVERTER and manipulator.

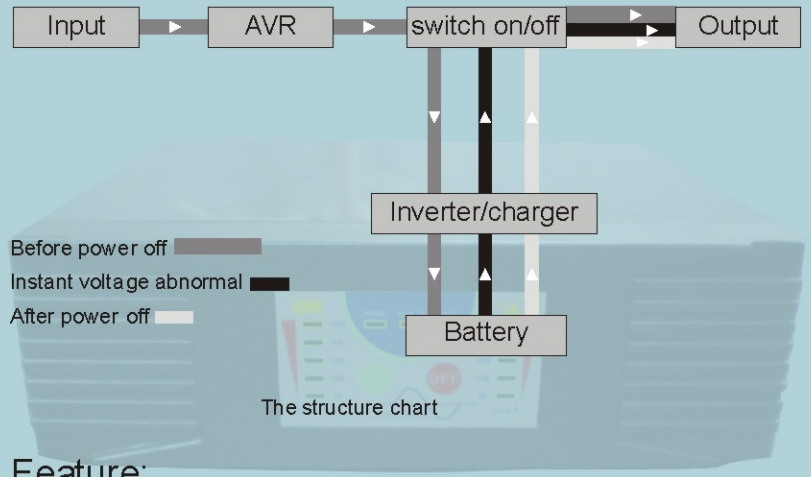
3、When need to replaceing fuse, should used same model and specification fuse.

4、INVERTER special battery should replaceing by speciality technican, replaced battery should give back reclaim institution to deal with.Depose battery bases law is "venomousness scrap".

5、Battery special use in INVERTER will self discharging,meawhile battery chemical energy will self consume.Because of the front reason battery should recharge once per three month. Require ambient temperature is about 20℃. If the temperature reach about 30℃,battery need recharge once per two month. Recharge only need to startup INVERTER, and run for 24 hours under normal operation.

6、Please install acorrding to the user manual strictly.

The structure chart



The structure chart

Feature:

1. Completely controlled by CPU.
2. Super wide input voltage range:90V---280V.Four-step AVR.
3. Protection against short-circuit,overload protection.When it is overload,it will lock the unit automatically,and when you throw off its load,it will turn on the unit automatically.With battery reverse polarity protection.Low-voltage input protection,over-voltage input protection.
4. Powerful charging current:500W up to 15A,1KW-4KW,up to 25A.
5. Output pure sine wave 220V+-3%.
6. It can drive inductive loads such as tube-lights,TV sets,air-conditioner,fans,refrigerators,motors,wind generator,solar system and so on.
7. It's humanized design,when the AC comes,it will start the unit automatically,and when it overload,it will also close the unit automatically,when you canel the load, then it will return to work autoamtically.
8. LCD/LED display(optional)
9. Smart RS232 communication port.it can realize software control function.

Safety

Correct direction

- This series a dopt uninterruptible way to supply power for loading.
- This series are applied to the environment of the office,family, Commerce stock,bank and so on.
- The long standby time depends on the extra connection of the Battery;connected the battery according to the user's manual

Caution

The user's personal safety is very important for our consideration,so Please read the user's manual carefully and strictly comply with the Using regulation before operating the equipment.

- Even if all of the switch are turned off,the machine still has the danger of high ovltage,so all the operation for moving or opening the case must Be finished by the authorized technical worker.

Safety notice:

In order to ensure safe using,please abide by the following:

- Read the user's manual carefully before operating the equipment, Please do not over load.
- Please cut off the power supply rapidly and contact with the local Dealer in case of faulty occur.
- In case of the fire around the machine,please use the dry fire Extingui sher be cause the fluid fire extinguisher can resultin the Danger of getting an e-le ctric shock.
- The equipment has no on-off switch of the comer cial power Supply,in order to on-off switch of the commercial power Supply,in order to cut off the commercial power supply in time When emergency occur, we recommended you to install a switch Above 25A in front of the machine, or connected the equipment Near the electric socket of the main power.
- Do not put the container which loaded fluid on the machine inOrder to avoid pouring the water into machine,and caused in ner Short circuit and the danger of electric shock or fire.
- In order to ensure safety,please install the equipmentin the good Grounding environment.

Emergency

Danger

All the loading switch should be cut off before the connection of the Equipment.watering on equipment should be forbidden ifthe the Equipment is on fire.

Leakage current

Danger

Connected ground cable well be fore you connect the other cable.

Radio interference

This series is A grade radio interference product.Any equipment Which is sensitive to electronmagnetic interference(such as emitter, Receptor,radar,metallic detector)should not get close to it.

Battery

Battery maintenance should be executed by perfessional Auth orized personnel.

- Electrolyte was cont ained in the battery whether the it is inbuilt or conneted Out side the equipment.In normal condition,the battery should be kept dry.
- The electrolyte might be leak if the battery was damaged.Hence do harm to Man's eyes and sdin.If suchincident is happened,please wash your injury With a great deal pure water and go to the doctor's immediately.Voltage is Existed on the battrey terminal.
- If the short circuit or big current discharge occur on the battery terminal,it is Easy to damage the battery and cause fire Monom er battery voltage is safe And the certain series connection of the battery vill formed dangerors voltage.
- The battery is valve regulated lead acid battery you needto charge the Battery(even if it is fully charged be fore)ifthe storage and non-use time Exceed 6 months when the temperature is 20 degree.other wise it will cause Battery fault.at this moment,it is required to startthe equipment.if the su-Ggestion is not accepted,it will not be able to gwantee the battery running Normally.we advise you charge the battery every 4 months.
- The capacity of the newbattery is always not up to 100% after the first charge. It can be up to requirement through several necessarily cycling charge and Discharge of the battery.
- In order to avoidthe pollution of the environment, the disposal of the waste And old battery should abide by the regulation of the harmful, toxic waste

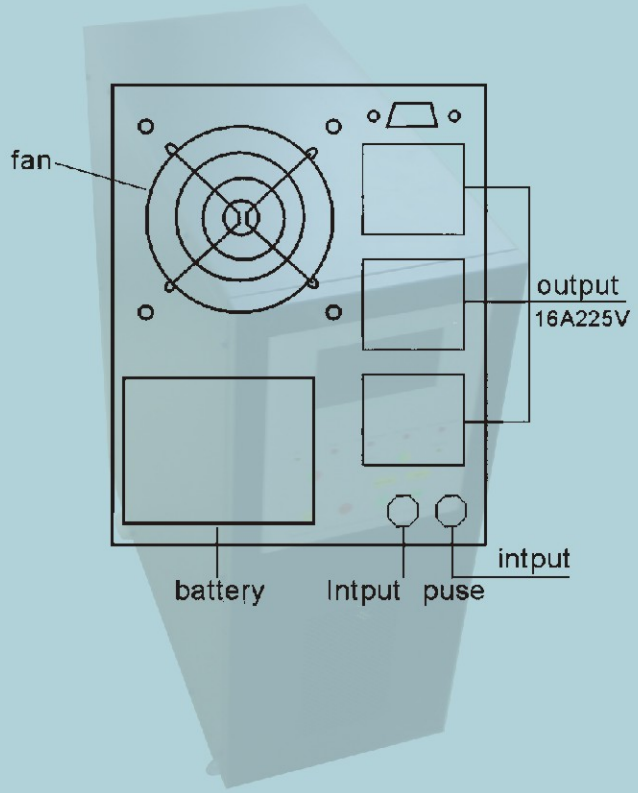
Repackaging

The package should abide by the following article:

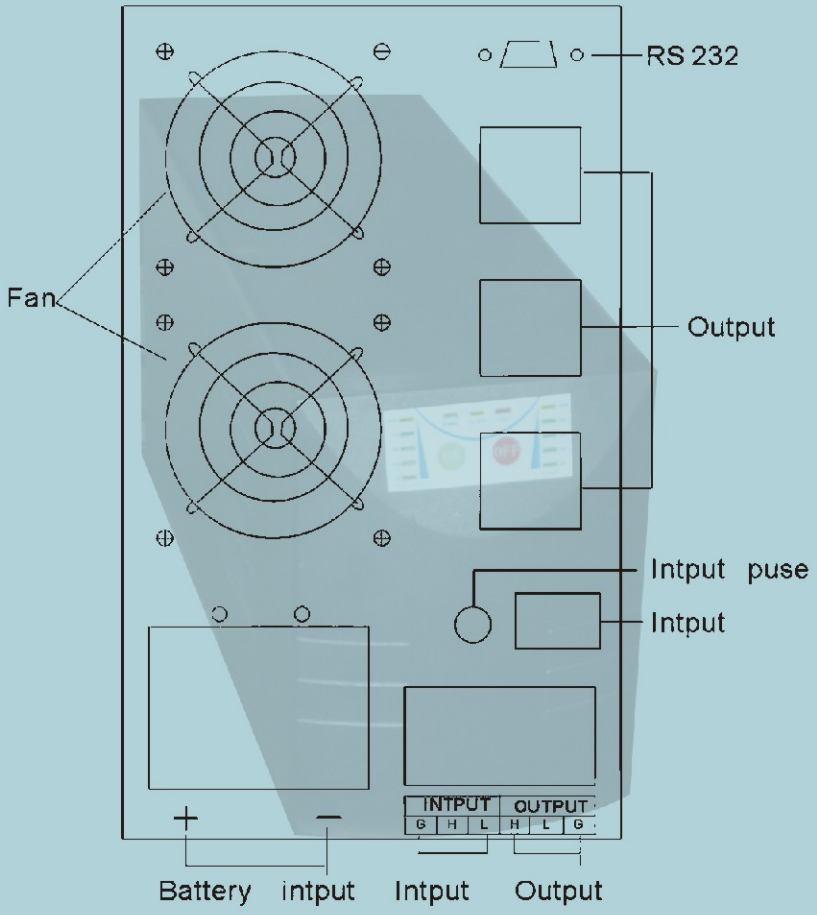
- **It should be packed after at least 6 hours for the last charge.**
- **Put the machine on ventilate and water-absorbent Material.(for example,100um polyethylene)**
- **Air draft disposal can not be done in the package.**

Rear view

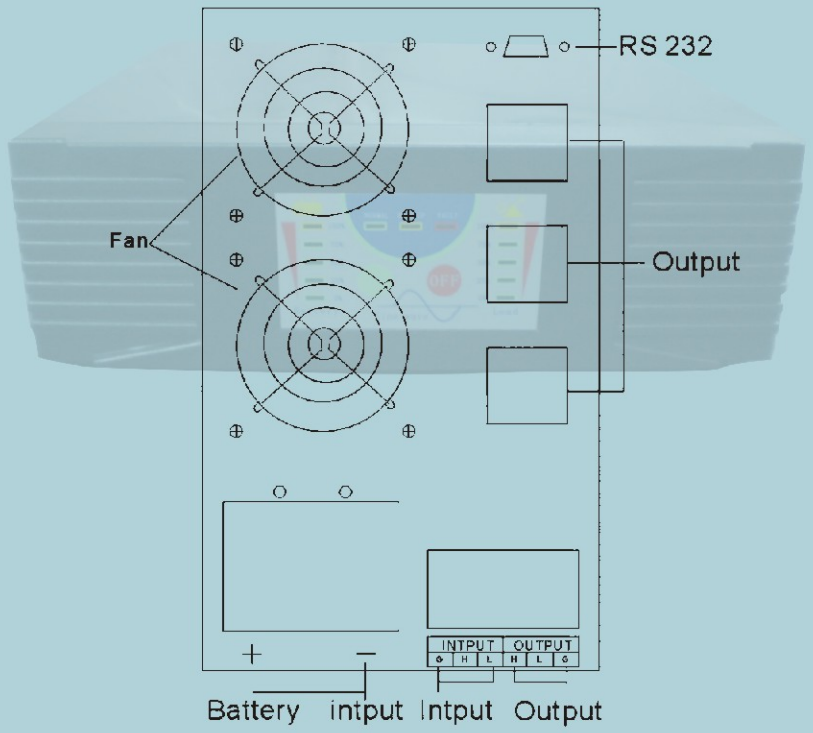
Rear view-1



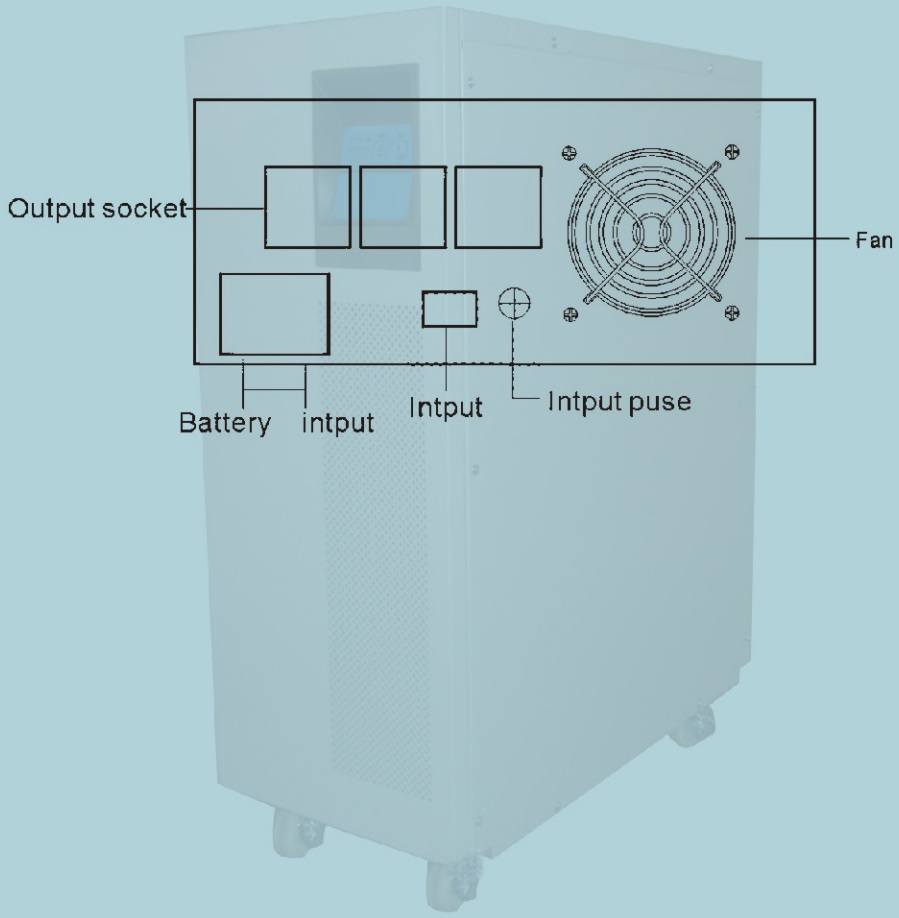
Rear view-2



Rear view-3



Rear view-4



Transportation and storage

Transportation

The goods has fully checked when it is delivered.plscheck the Package to see whether it is damaged after receiving the goods. If there is any damage or missing parts,please make sure you. Inform the dealer within 7 days after receving the goods.

Unpacking

In order to avoid the destroying of the equipment,you should take Special are when moving the equipment and check all the packing Material to make sure the attachments is inside the package.

Storage

If the equip ment would not be used within 7 days after receiving it Please store it ac cording to the storage condition.please make sure You keep it in the moderate temperature(0℃-35℃) and the clean, Dry environment.

Handling

The equipment must be dept erect and handled with care Any drop Or violent impact would destroy the equipment.

Installation

Caution

The installation should be excuted according to the local safely St-andard by the qualified technical personnel.

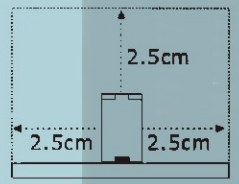
Environment

The equipment must be installe duprightly on a level or on the ground. The temperature and humidity should be qppropriate do not place Any object on the top of the equipment

The working environment temperature of the equipment range from 0 degree to 35 degree(when the temperature is up to 40 degree the equipment can continuously work 8 hours at most) and the ideal temperature condition is 15 degree to 25 degree he battery life is defined at 20 degree every increase of 10 degree above 20 degree will shorten the expected life by 50%

Space size

The placement of the equip ment Set aside 2.5cm for the upside and circumambience of the equipment.



- Avoid direct sun light
- Avoid over-heating
- Avoid humidity and the contact with liquid
- Avold dust.

Maximum Current and recommend dation of Connecting the wire size of cable

Current and recommended wire size of the cable are listed in the Below form (in accordance with the standard of IEC-287):

1) PVC isolated copper core(@70℃)
2) Environment temperature should be lessthan 40℃
3) please use the thicker cable when the above 2 points can not be satisfied.

Rated capacity (VA)	500	1000	1500	2000	3000	5000
Max. Input current/A	2.3	4.5	6.0	7.3	11.5	17
Input cable size/mm	0.75	0.75	1	1	1.5	2.5
Max.Output current/A	1.5	2.8	4.2	5.5	8.2	13.6
Output cable size/mm	0.75	0.75	1	1	1.5	2.5
Earth cable size/mm	0.75	0.75	1	1	1.5	2.5

Table:UPS max.current and specific ation of wiring

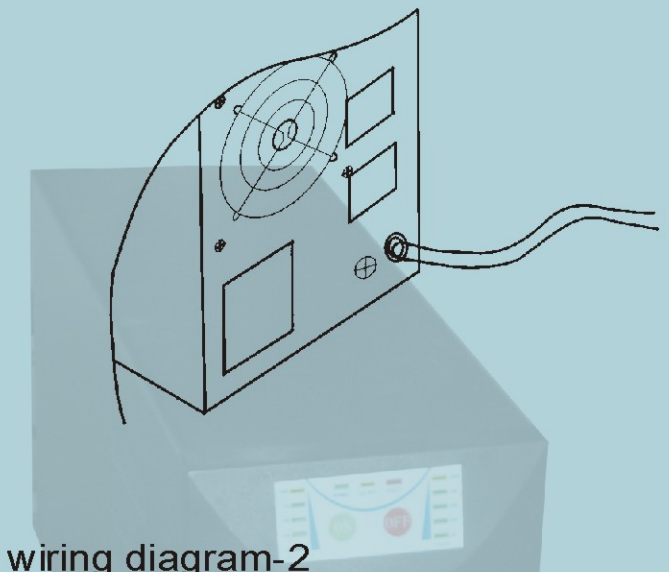
External protection devices

The items external devices adopts the appropriate breaker or fuse.

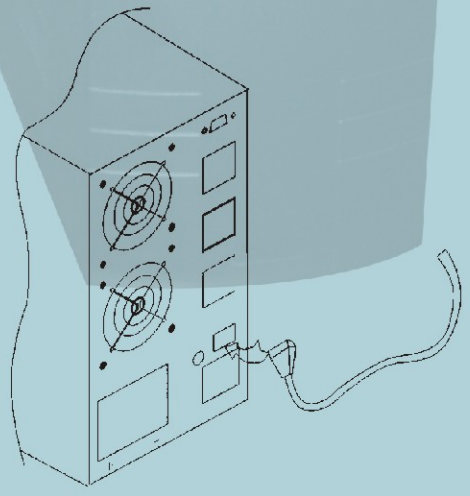
Notice

The battery cabinet must be connected near the equipment and Collo cated proper breaker or fuse when connected the Battery cabinet externally.

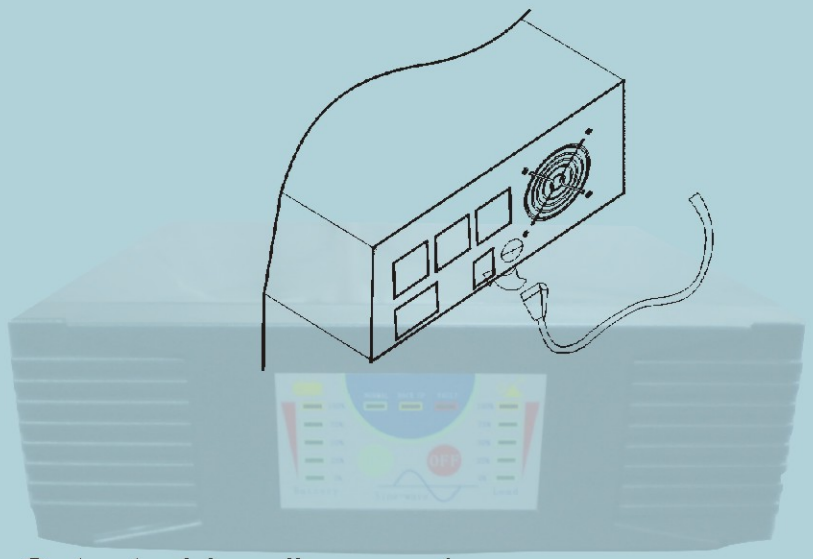
Input wiring diagram-1



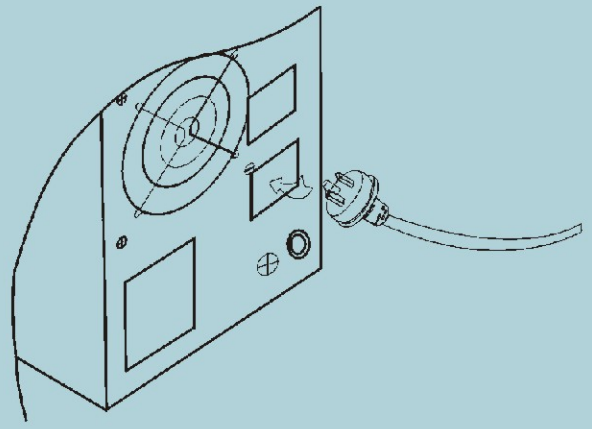
Input wiring diagram-2



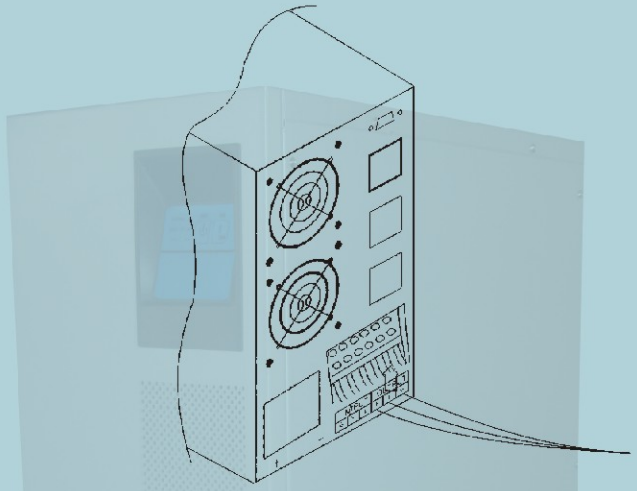
Input wiring diagram-3



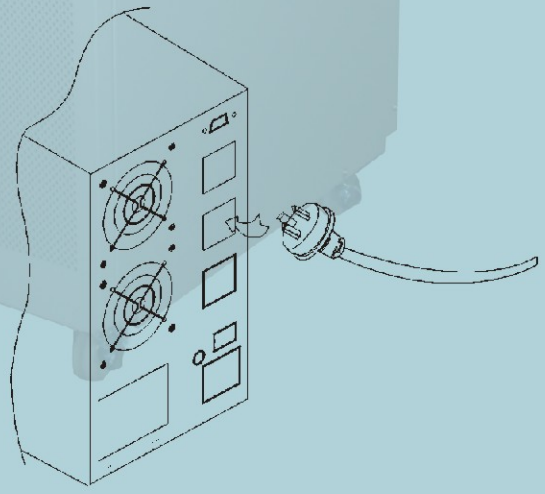
Output wiring diagram-1



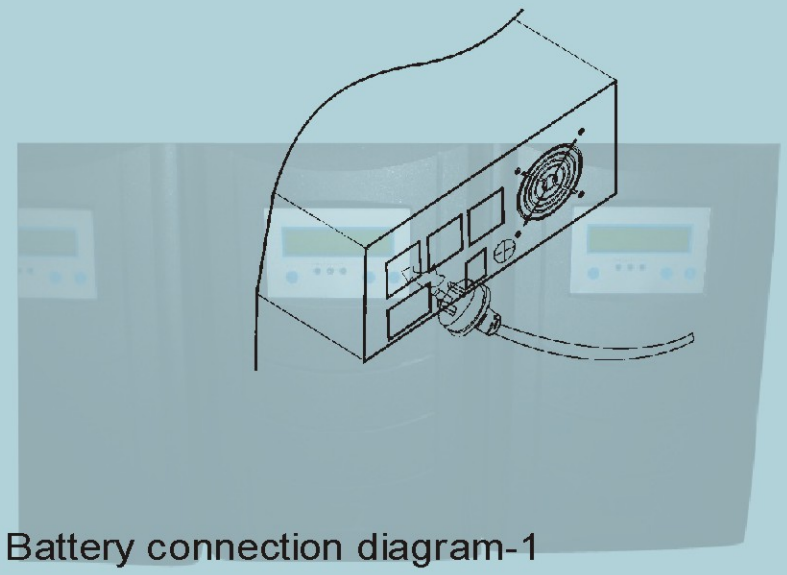
Output wiring diagram-2



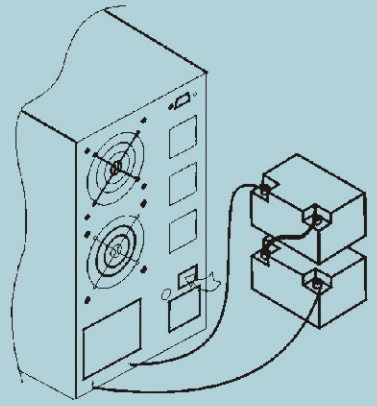
Output wiring diagram-3



Output wiring diagram-4

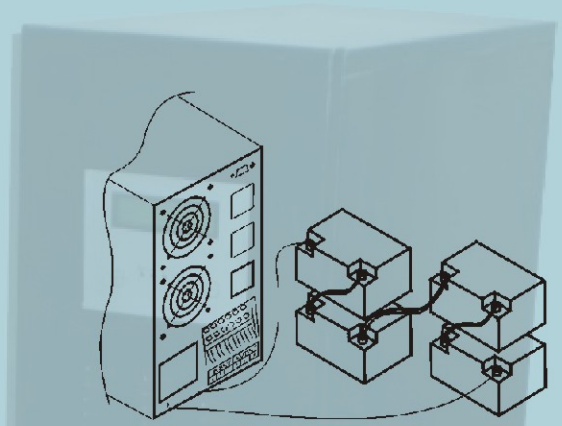


Battery connection diagram-1

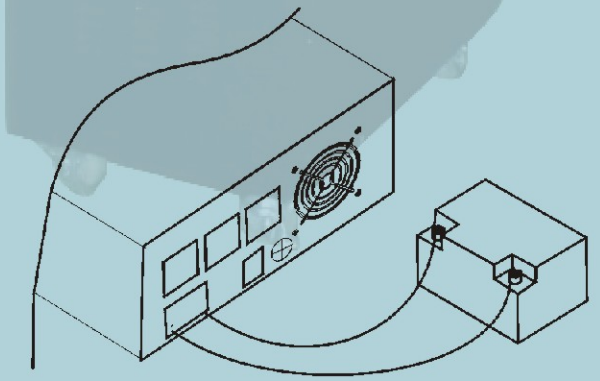


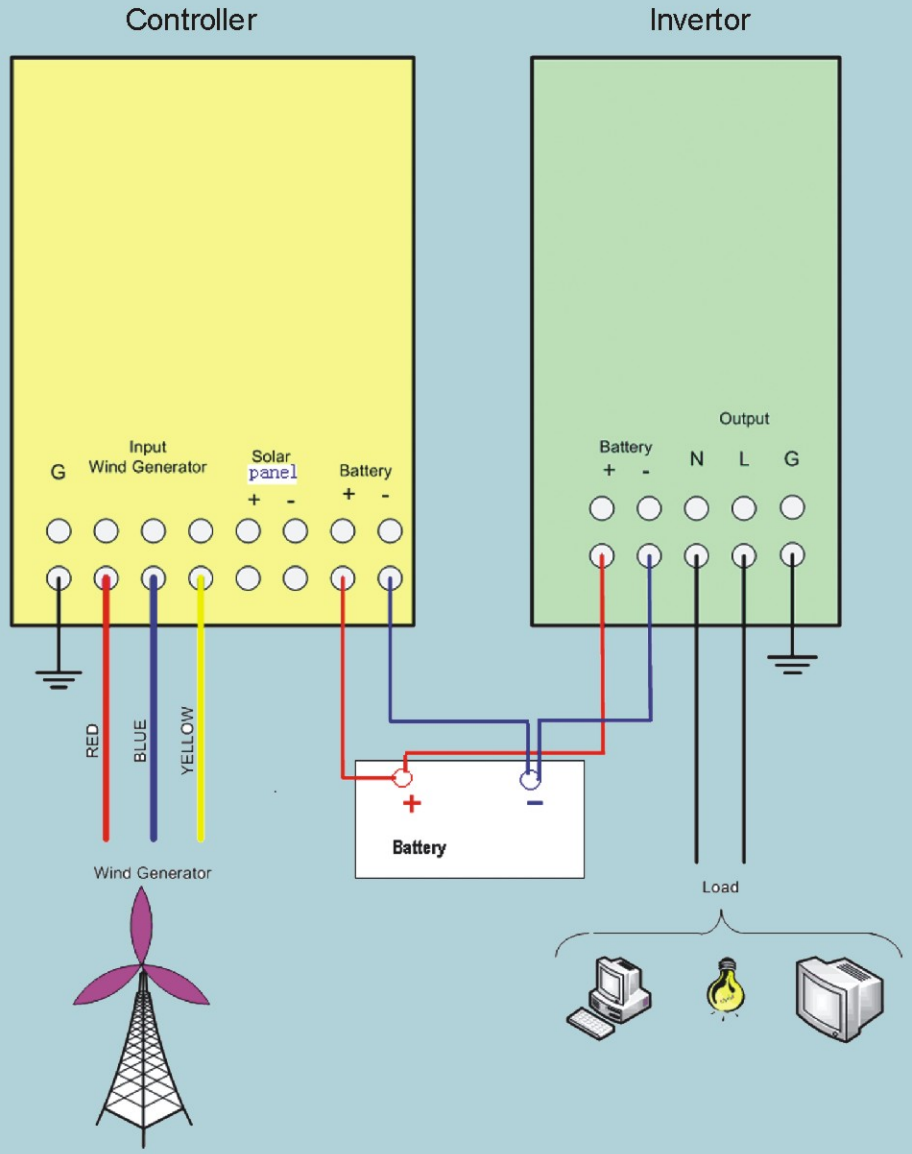
RED--BATTERY+
BLACK--BATTERY-

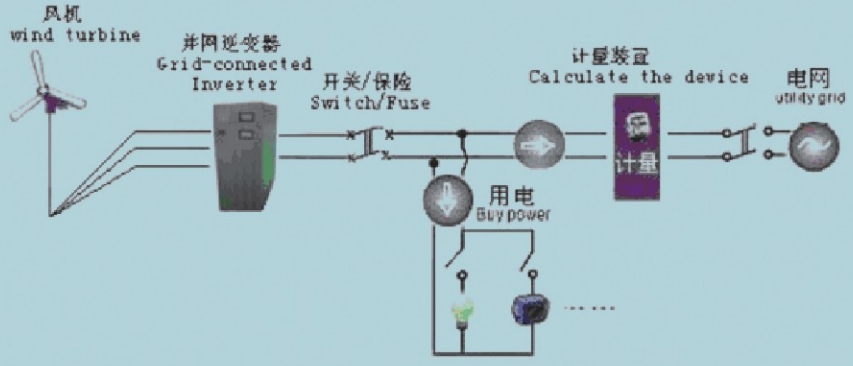
Battery connection diagram-2

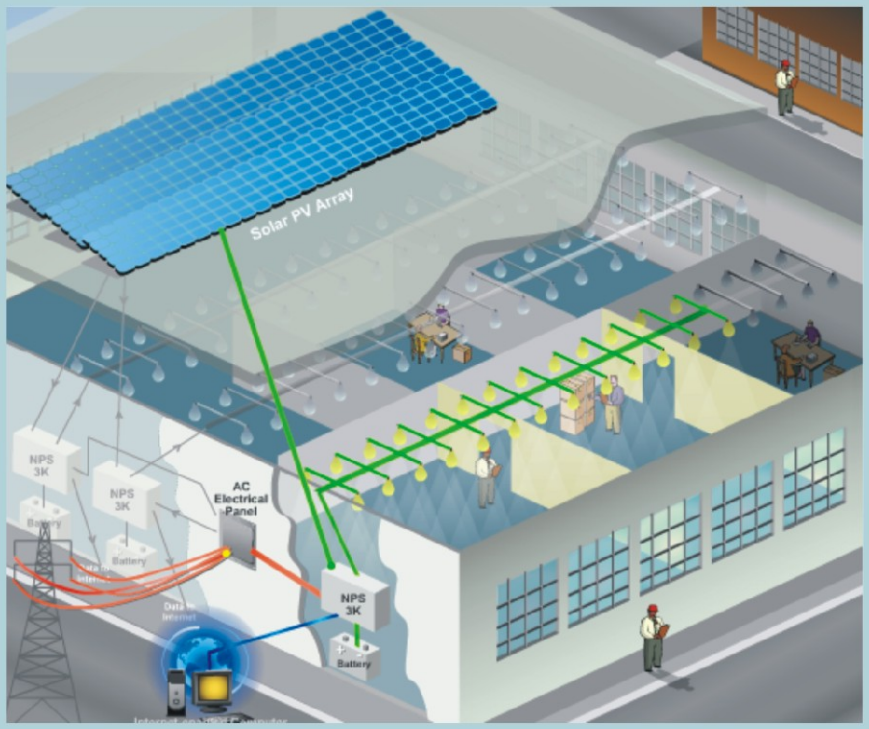


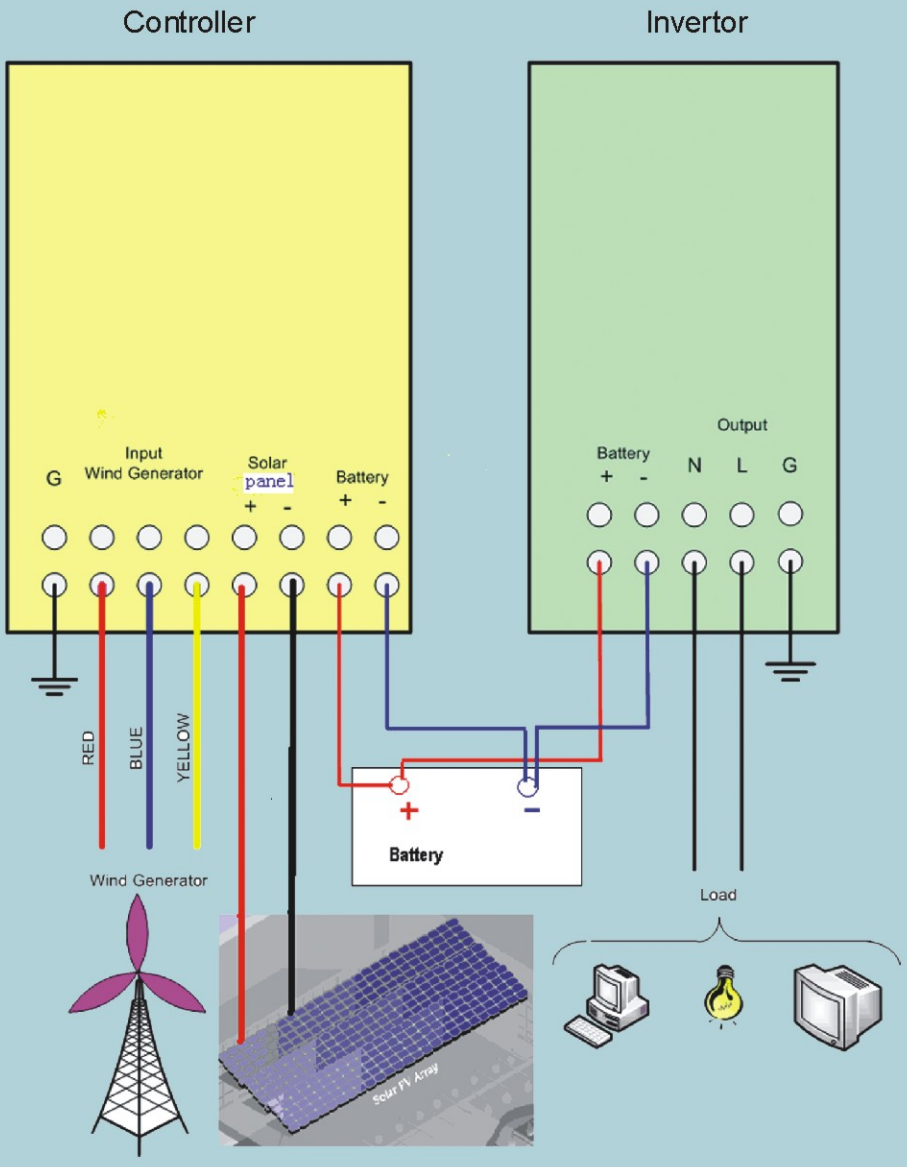
Battery connection diagram-3

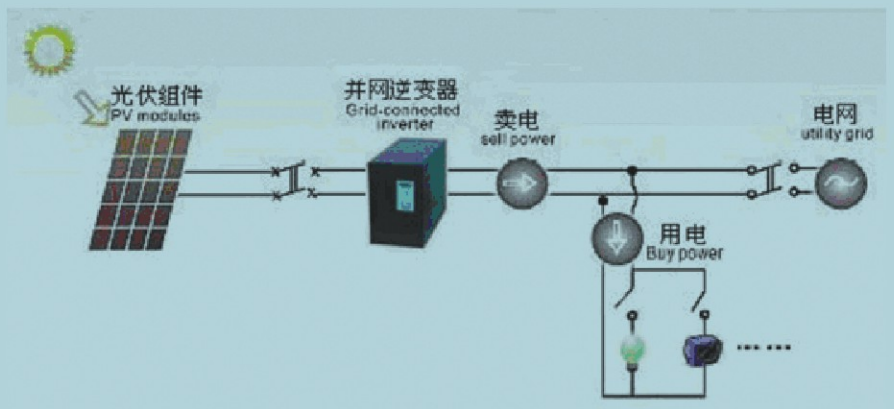


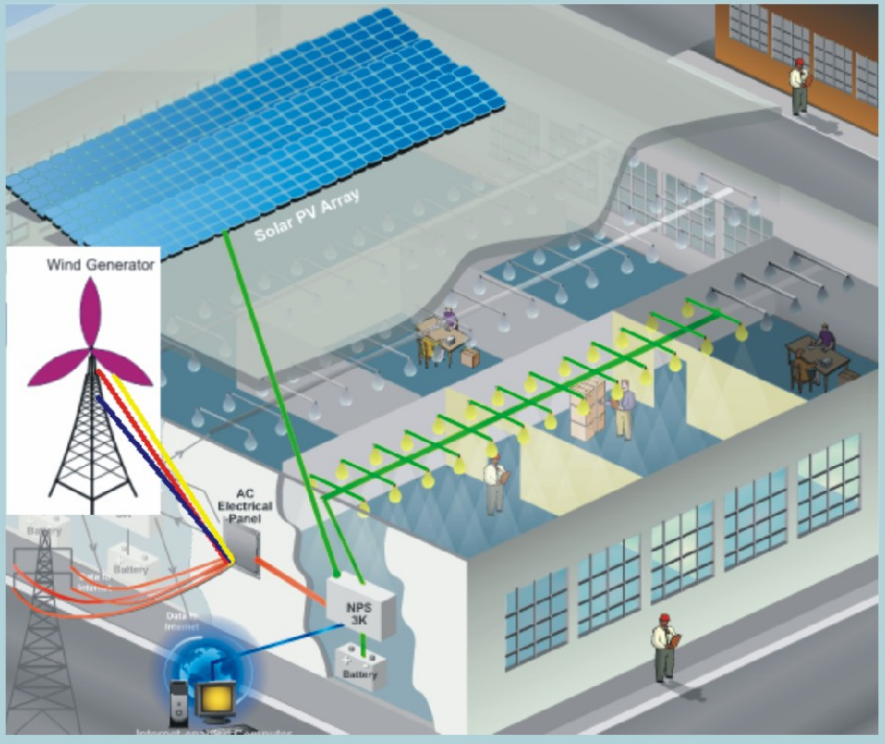

Controller
Invertor
G
Input
Wind Generator
Solar
panel
Battery
+ -
+ -
Battery
+ -
N
L
G
Output
RED
BLUE
YELLOW
+
-
Battery
Wind Generator
Load


风机
wind turbine
并网逆变器
Grid-connected
Inverter
开关/保险
Switch/Fuse
计量装置
Calculate the device
电网
utility grid
计量
用电
Buy power


Solar PV Array
AC
Electrical
Panel
NPS
3K
Battery

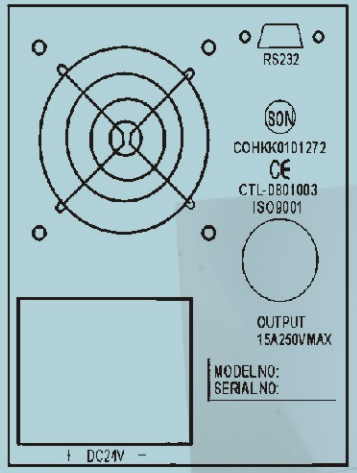

Controller
Invertor
G
Input
Wind Generator
Solar
panel
Battery
+ -
+ -
Output
Battery
+ -
N
L
G
RED
BLUE
YELLOW
+
-
Battery
Wind Generator
Load
Solar PV Array


光伏组件
PV modules
并网逆变器
Grid-connected
inverter
卖电
sell power
电网
utility grid
用电
Buy power

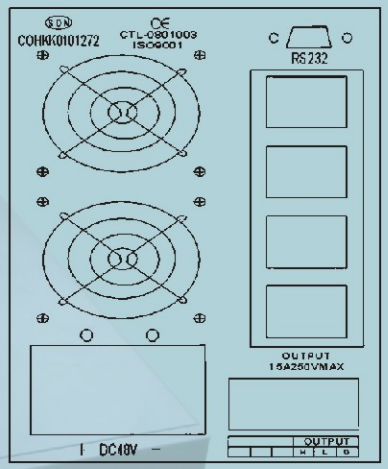

Solar PV Array
Wind Generator
AC
Electrical
Panel
NPS
3K
Battery

Rear view of INVERTER

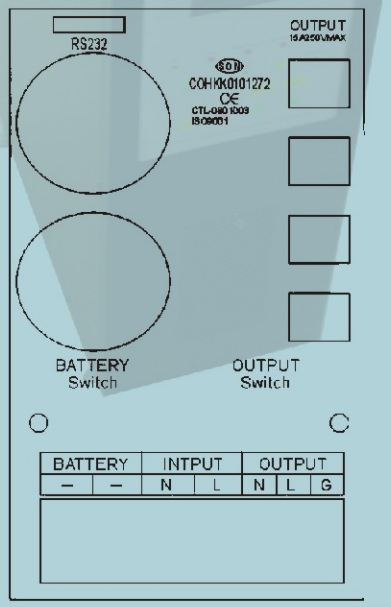
Rear view-1



Rear view-2



Rear view-3



Equipment operation

Preliminary running control

You should abide by the following rule before starting the Equipment to supply the power for loadingl.

- Make sure good ventilation.
- Make sure good connection of the ground line.
- Make sure all front panel and rear panel switches or the
- Equip ment and extemal connected battery switc hes are in the "OFF" position.

⚠ **Danger**

- After the equipment is connected with the main power,the Outputport will be in electriferous condition even if the front Switch of the equipment hasn't been opened.
- Do not connect any equipment which makes the quipment occur Overload or DC loading equip ment. (for example:hair drier,vacuum cleaner)

¡ **Notice**

if the se instructions are not completed comply,problems may be appeared in the process of supplying power.

Start-up procedure

- ▶ **The switch of the extemal battery cabinet should be in"ON"p-osition.**
- ▶ **Press "ON" or "POWER" on front panel of the equipment**
- ▶ **Make the user's input switch at "On"position.**
- ▶ **Wait at least 30 seconds till the output voltage stable.**
- ▶ **Take tums to tum on the external loading.**

⚠ **Danger**

Long beeping sound if the loading overload,please reduce some Loading and then turn on the equipment.

Shutdown procedure

Notice

Carrying out this procedure will turn off all the loading.

- **Turn off all the loading switch.**
- **Press the button"OFF"or"POWER"of the front panet then to Switch off the inverter.**
- **Make the user's input switch on "OFF"position.**
- **Make the switch of the external battery cabinet on "OFF"position.**
- **Make syre all the switch and breaker of equipment have been Shut down.**
- **Make sure all the indicator light is put out and the equipment Power supply completely shut down.**

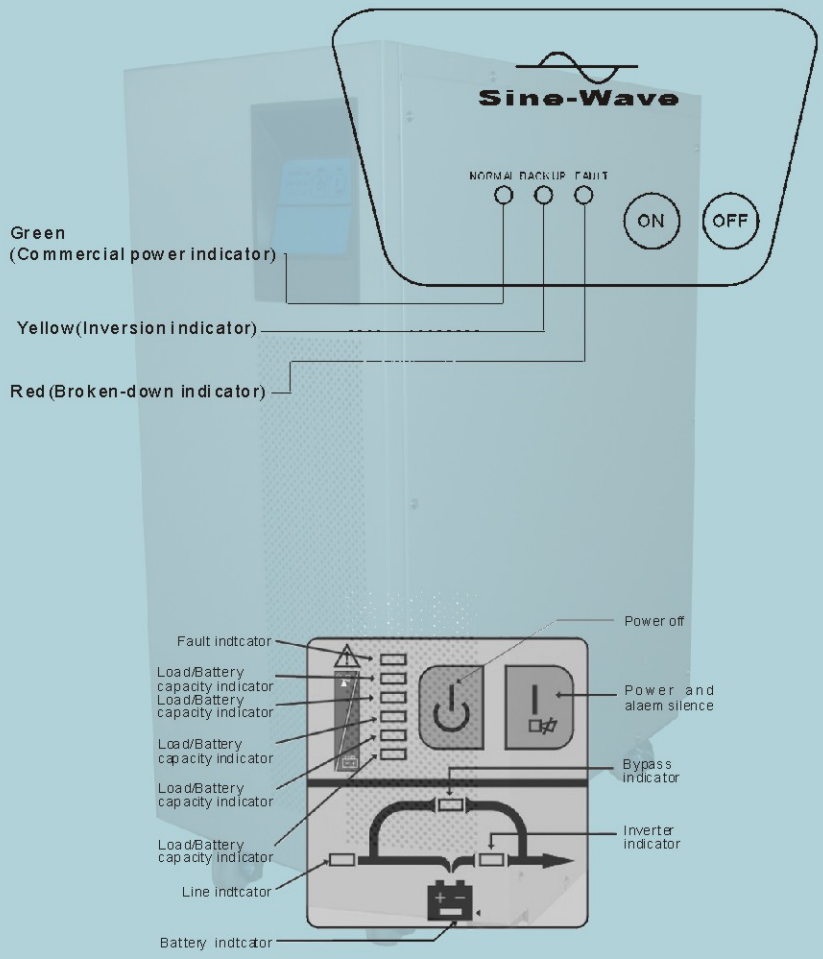
Function testing

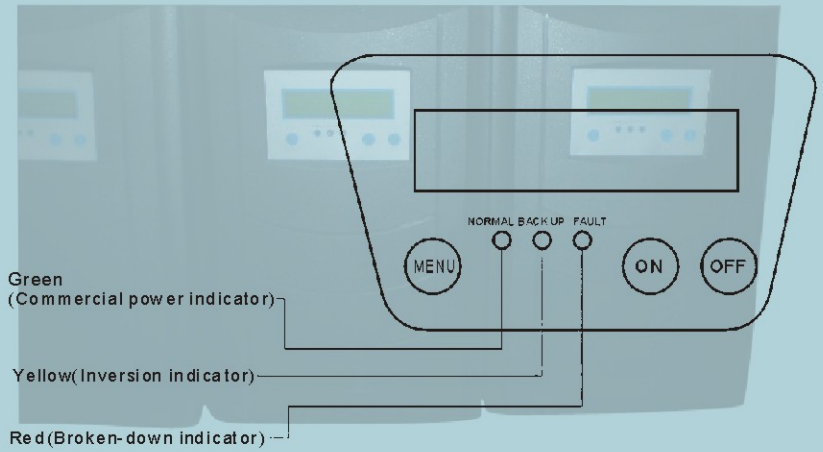
Notice

During the course of the testing,the equipment can not gurantee the Power supply of loading normally,important loading equipment can't Be connected to the back of equipment.
During the testing course,pls.shut down commercial power input to Interrupt the simulated commercial power of the equipment.if the Equipment runs normally,and the batteries are full of charging,beeping Sound 4 times every 1 minute can be heard(notice:inverter without Beeping sound).At the same time,if the indicator light is put out that Means the equipment is running on battery mode.if the equipment Beeping sound is heard every one second,the dquipment will automa-Tically shutdown after continue supplying power at most 1-3 minutes. Battery supplies the power for the loading during the urgent power Supply situation.plspay attention to the battery,which must be charged Before using the equipment.

Display Instruction

Panel display





Maintenance

Disposal of battery

The batteries are maintenance-free by the user,if the using lifetime Of the battery has expired,the batteries must be replaced by the Responsible customer service representative.redemptory lead a cid Batteries aer classified as toxic and harmful waste,the disposal of The waste and old batteries must be approved by a recy cling center In accordance with the law.Asa rule the using lifetime of the battery Can reach to 3 year satthe environment temperature of 25℃. Meanwhile,it is also dependent on the fre quency and duration of Main power failuer.

Notice

In order to make sure the normal of the battery,in a general condition (in the condition of the batteries seldom discharging),the battery test should be carried out periodically (4-6 months),after the battery discharge until the equipment shut down,then charge continuously over 12 hours.Ensure the equipment take 50% above loading for disc har ging in or der to avoid damaging batteries for deeply discharging.

Storage

For extended storage,the batte ries must be charged for not less Than 12 hours once every 4 months at the ambient temperature ≤25℃,it is a dvised that this period be reduced to 2 months at the higher storage temperature.

Cleaning disposal

- **Press the switch to turn off the machine and cut off the Comercial power supply.**
- **Use the dry or a little dampish cloth to clean the surface Of the machine.**

⚠ **Danger**

Do not use the washings or the corrosive to clean the equip ment.
Do not allow the liquid to pour inside the machine.Ensure the ventilation of the equipment.

Communication

This series uninterruptible power supply provide Rs 232 port that realize
The communication of the equipment and to computen.If you have
Something please contact your dealen

RS 232interface introduction(only for"UPS")

The series provides port of RS232 interface.
This will let the user to monitor equipment in/output status any time.

Notice

Using interface must qdopt the tallormade communication wiring that is
Outfit with the equipment.

Definition for RS 232:

Baud Rate:2400 bps
Data Length:8 bit
Stop Bit:1 bit
Parity:None

SNMP card

Network interface card connection:

Power 9VDC: DC9V Input
DEVICE: communication ports RS232
NETWORK: network Input

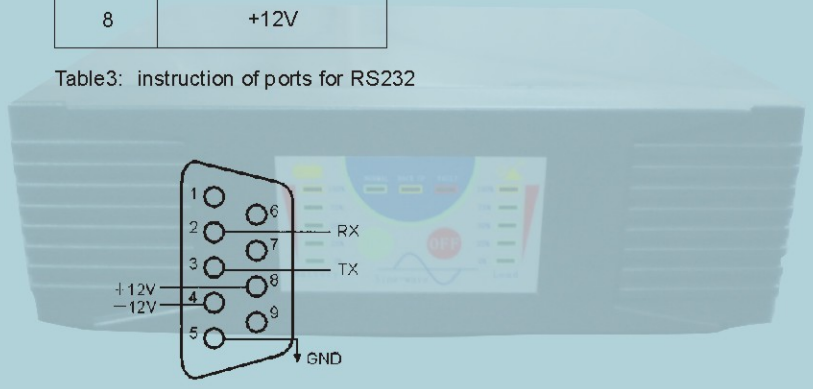
Instruction:

Open IE explorer, type in the IP address(192.168.0.100)into the address and then connect the communication port RS232 to network card.Turn on the inverter and the page will list out the technical data of the inverter.

The following are the instruction of the ports of DB-9 connetor 's:

Pin	Function instruction
2	input
3	output
4	-12V
5	Connection ground
8	+12V

Table3: instruction of ports for RS232



RS232 Connecte port

Faulty management and service

If the machine is abnormal,please check the following points before Contacting the responsible customet service representative:

- Check whether theeouipm ent outside-connected battery is mormal or not; Check ifthe battery has damages.
- Chcek ifthe equipment have com merical power,and ched ifthe voltage And frequency of the commercial power comply with the equipment
- Check the condition of input fuse and check ifthe breaker is cut.

If you want to contact with customer service representative,please provide The following in form ation:

- Equipmentin formation:MODELNO,ORDERNO,SERIAL Number(printed In rear panel)
- Detail description of the faulty equipment(suchas:load type,acddental Fault or the indicator lights on and the alarm sounds heard always)

Service

Notice: If equipment need check and repair,please follow the step. If breakdown-trouble is still exist,please ask the agent For help.

▶ **With regard to be common problem,please check and repair According to the reference of trouble handling.**

▶ **If the trouble is still exist,please ask the agent for help.**

- Please take note for the equipment model,number and purchase Date and then ask the technician.
- The equipment can repair with free charge during grarantee repairing Period.but repairing charge will be paid by artificial.
- Please provide proper packing when the equipment return to the agent, In order to avoid breakdown by transportation.

Notice: Do not use foam ethane as packing material.We are not Responsible for repairing damaged by tran sportation. (Suggestion:Using parcel insurance)